To: Rafael Casanova
From: Jessica White, Tammy Ash, Ken Rice, Keith Tischler, Don Pitts, Richard Seiler
Date: June 30, 2005
Re: Comments for 'RI/FS Draft Sampling and Work Plans' for Falcon Refinery Superfund site

National Oceanic and Atmospheric Administration, Texas General Land Office, US Fish and Wildlife Service, Texas Commission on Environmental Quality, and Texas Parks and Wildlife Department would like to provide the following comments for your consideration.

General Comment 1:
The revised RI/FS work and sampling plans do not adequately address, either through proposed work or by description and commitment to future work, contaminant delineation and potential ecologic impacts associated with refinery operations, known and suspected releases, and NORCO's obligation under the Administrative Order of Consent. Areas of concern not adequately addressed within this document but clearly identified by Regulatory and Trustee agencies in prior comments and the March 4, 2005 meeting in Dallas, Texas include: The permitted refinery outfall, wetlands on-site or in Redfish Bay, and pipelines leading from the facility to the facility dock. Sequential sampling and delineation of these areas to effectively and efficiently collect data does not eliminate the need to clearly identify a preliminary approach to sampling and commitment in the Work Plan or the timeline accompanying the Work Plan. The proposed rationale for omitting discussion or sampling of these areas (i.e., no reported discharge, resolution of alternate responsible parties) is unacceptable (see specific comments). The wetlands, Redfish Bay, and refinery related infrastructure represent significant and relevant potential ecologic points of exposure and pathway sources respectively. It is stated repeatedly in the document in various forms that "the wetland areas located south, southeast and east of the facility and the pipelines leading

from the North Site to the docking facility will be evaluated in the future, after the issues concerning the ARM Refining pipeline spill in the wetlands are resolved." This is unacceptable and counter to the intent of CERCLA which states that identifying a release or facility on the NPL provides notice that the entire facility will be addressed; the facility includes the source or sources of contamination and any area where a hazardous substance release has "come to be located"(CERCLA Section 101(9)). The NPL does provide that the nature and extent of the threat presented by a release will be determined by an RI/FS as more information is developed on site contamination (40 CFR 300.430(d)(2) (55 FR 8847, March 8, 1990)).

a. The wetland areas must be evaluated since they are an important POE for both ecological and human health receptors (duck hunters and fishermen). The Trustees will not support the approval an incomplete RI/FS that does not fully address the nature and extent of contamination in the wetlands. In addition, the Trustees will not support the approval of an ecological risk assessment that does not adequately characterize risk to ecological receptors from sediment ingestion and exposure, be it from the on-site wetlands or in Redfish Bay.

b. The Trustees resubmit the following comments regarding the pipelines leading to the dock facility: the status of these pipelines, including locations, which ones are currently in use or were used in past operations, and the type of materials transported or remaining in the pipelines is unknown. This represents a large uncertainty with regard to human health and ecological risk. Future removal actions on-site may not address exposure from abandoned pipelines that still contain material. The RI/FS should at least include some discussion of these pipelines, any plans to determine the composition of material remaining in them, and any plans to decommission them.

General Comment 2:
Background samples should be collected concurrently with the other samples in order to provide an appropriate comparison with which to characterize the nature and extent of potential contamination of the site. These background samples should be taken at appropriate reference locations, specific to each medium to be sampled, and should be abundant enough to provide adequate reference points. This is particularly important for sediment samples, which are inherently variable due to the physico-chemical properties of aquatic systems.

General Comment 3:
The submitted document does not address several previously submitted Trustee comments. Specific comments not addressed include Trustee General Comment 1, General Comment 4, and General Comment 5 as submitted to the Environmental Protection Agency (EPA) October 8, 2004 and incorporated as an attachment to EPA's comments submitted to NORCO (BNC Engineering) on February 3, 2005. General Comment 1 noted that speculation and opinion were not appropriate within the RI/FS. Numerous references to proposed alternate responsible parties, speculation on release events and volumes, and likelihood of release occurrences exist within the report. NORCO has been tasked to delineate suspected contamination and such discussion is peripheral to achieving this goal. General Comment 4 identifies the significance and need to include and evaluate the status

of the pipelines used to transfer product between the facility and dock as a current or historical potential contaminant source. The current revision lacks a discussion of this topic. General Comment 5 identifies the adjacent wetlands as a potential exposure point that requires inclusion in the RI/FS as data was not evaluated against ecologic screening levels. The current revision defers discussion of this topic pending resolution as to the inclusion of an alternate Responsible Party (RP). Additional minor comments not addressed include joint EPA and Trustee comments requesting a topographic map to assist in evaluating surface hydrology (see comment listed below applicable to RI/FS Work Plan, Page 26-27, Section 5.5.9, 2nd Paragraph).

Specific Comments, RI/FS Work Plan document

Specific Comment 1
Section 2.0, Site Background and Setting, p 2: The reference to refinery operations as not having occurred since the facility has been owned by NORCO is superfluous to NORCO's responsibility under the Administrative Order of Consent. This statement should be omitted.

Specific Comment 2
Section 2.1, Site History, p 3: The reference to NORCO never having operated the facility or spilling any materials is superfluous to NORCO's responsibility under the Administrative Order of Consent. This statement should be omitted.

Specific Comment 3
Section 2.2.1, Site Physical Characteristics, p 3: This section states that "three small tanks have been placed at the North Site near the former truck racks since the facility was operational. The owner and contents of the nearly empty tanks are unknown." The revised document should include a discussion of the sampling of these tanks and surrounding areas if needed.

Specific Comment 4
Section 2.2.1.4, Surface Water Hydrology, p 5: The reference to the NPDES discharge permit as never having been used is inconclusive with regard to confirmation that contaminants have not been discharged at the outfall as releases may have occurred outside the permit, wastewater treatment (noted on page 8, Section 5.2.1.1 in the Field Sampling Plan as non-operational at one point), and/or storm water discharge. This statement should be omitted or modified to indicate no recorded discharges occurred under the permit. Since the water treatment facility was usually off-line according to the historical documents, it seems likely that untreated water was discharged at this point thus necessitating the sampling of the potential POE at the outfall location.

Specific Comment 5
Section 2.2.1.6, Human Population and Land Use, p 7: Sampling of the wetlands is NORCO's obligation under the Administrative Order of Consent. Numerous releases have been documented from the NORCO owned facility and the potential identification of a contributing source other than the facility does not eliminate NORCO's obligation. The statement and position that NORCO is delaying sampling of the wetlands until the ARM spill

is resolved is unacceptable as such a unilateral decision is not within NORCO's prerogative under a cooperative effort driven by the AOC. This statement should be omitted. The wetlands represent a significant potential point of ecologic exposure as stated in previous Trustee comments submitted with EPA comments to NORCO (BNC Engineering) February 3, 2005. Resolution of responsible party contributions to observed contaminants should be addressed through EPA directly and does not obviate NORCO's responsibility to determine the extent of wetland contamination as the current designated RP. Statements and rationale applicable to identifying alternate or contributing responsible parties, and verification of those statements, are not appropriate content for an RI/FS Work Plan. As part of the Superfund equivalent process, other responsible parties were not named in the AOC for the Falcon Refinery Site, therefore it is still NORCO's responsibility to delineate nature and extent of contamination in the wetlands adjacent to the refinery and pipelines. Paragraph 4 of the AOC states that: "NORCO and EPA agree that this Site was proposed for listing by the EPA on the National Priorities List ("NPL") on September 5, 2002 (67 Federal Register56794), and may be eligible to be placed on a final NPL. EPA agrees to suspend the listing of this site on a final NPL and NORCO agrees that EPA will suspend the listing of this site on a final NPL so long as NORCO undertakes the actions equivalent to those required at NPL sites in accordance with the terms and conditions of this Order [AOC] and the EPA's memorandum addressing alternative sites ("Response Selection and Enforcement Approach for Superfund Alternative Sites," June 24, 2002; OSWER 92-08.0-17 [Superfund Alternative Sites Guidance])." The Trustees consider delaying the delineation of the nature and extent of potential contamination of the wetlands as a probable violation of the primary condition (underlined above) of the agreement allowing the alternate Superfund listing of this site.

Specific Comment 6

Section 2.2.1.7, Endangered and Threatened Species, p 7: NORCO will be required to obtain current endangered and threatened species lists from both Texas Parks and Wildlife Department and the US Fish and Wildlife Service. In order to rule out the presence or absence of endangered or threatened species on site, a qualified ecologist must present evidence that associated habitat is not present at or near the site. Simply relaying on the data from the HRS package or from a single day's survey to determine only presence/absence will not be enough evidence to rule out utilization by mobile receptors.

Specific Comment 7

Section 2.2.3, Nature and Extent of Contamination, p 8: The text states "after NORCO received comments...a review of the project information revealed there had been a major release into the wetlands in 1985, from a pipeline not owned by NORCO or any of its predecessors." Is this a reference to the ARM pipeline spill or a different spill? Please clarify which spill and which wetlands were impacted. When discussing various pipeline spills, it would be helpful to have a figure depicting the location of the pipelines and their subsequent ownership. The statement that some of the discussed spills and releases are not associated with the Falcon Refinery is not relevant. Statements of opinion as to the validity of those records are inappropriate and not constructive. The statement should be omitted.

Specific Comment 8
Section 2.2.3, Nature and Extent of Contamination, p 9: This section speculates as to the volume of the 1985 spill into the wetlands by ARM Refining. Speculation on initial release volumes and dynamic conditions is not pertinent to sample based delineation of current contaminant distribution. The statements should be omitted. It is likely that methods used during cleanup operations resulted in contamination upstream from the spill site, instead of NORCO's speculation that the spill was 45,000 gallons in nature. In addition, NORCO assumes no effects of current, no adhesion to plant material, and a thickness of 1/16 of an inch of product, which likely results in a gross overestimation of volume of the spill.

Specific Comment 9
Section 2.2.3, Nature and Extent of Contamination, p 11: Omit the following irrelevant statement, "It should be noted that NORCO did not own, operate or have any relationship with Gulf Conservation Corporation (GCC) at any time."

Specific Comment 10
Section 2.2.3, Nature and Extent of Contamination, p 12: The statement that there is no chance that the tanks will overflow is qualitative and inexact and should be omitted or modified. Rationale indicating that an overflow is highly unlikely based upon (and citing specific values for) recorded historical rainfall rates and tank volume would be appropriate.

Specific Comment 11
Section 2.2.4.1, Other Sources, p 18: Revise the title of this section. Alternate sources of contamination have yet to be identified as contaminant extent and character remains to be determined. Potential Off-Site Sources or Adjacent Facilities would be a more appropriate heading. The current heading is inaccurate.

Specific Comment 12
Section 2.2.4.1, Other Sources, p 18: The statement that sources up gradient the North Facility have likely impacted the NORCO facility should be omitted as it subjectively identifies a conclusion that remains to be substantiated. The groundwater potentiometric map provided as Figure 14 does not unequivocally substantiate this statement. The prior paragraph referencing Figure 14 also states quarterly gauging and sampling was conducted at 19 monitoring wells. A comparison of Figures 14 and 15 shows the area under TCEQ's Voluntary Clean-Up program immediately adjacent MW-1, MW-2, MW-3, and MW-4. The potentiometric map in Figure 14 incorporates and appears applicable to both areas. The quarterly gauging should provide data for multiple potentiometric maps that reflect the groundwater gradient over multiple seasons and years substantiating or refuting such a position. Why was this additional information and graphic representation not included? This observation was previously identified in Trustee comment to Section 5.1.3 of the RI/FS Field Sampling Plan and submitted with EPA's February 3, 2005 comments to the Draft RI/FS.

Specific Comment 13

Section 3.1, Types and Volumes of Waste, p 20: This section fails to mention potentially impacted sediments in its characterization of types and volumes of waste. Please clarify.

Specific Comment 14
Section 5.5.9, Surface Water and Groundwater Resources and Uses, p 26-27: The statements summarizing discussions regarding Site topography are presented in Section 2.2.1.4 in a misleading manner and should be omitted. The only additional information provided in the description in Section 2.2.1.4 is one sentence referencing aerial topography and possible inferences about hydrologic communication. The inclusion of a topographic map would be beneficial to evaluate surface hydrology as previously identified in Trustee General Comment 6 for the RI/FS as submitted with EPA's February 3, 2005 comments to the Draft RI/FS, at the March 4, 2005 meeting in Dallas, Texas, and as Item 20 in EPA's Addendum Letter to the February 3, 2005.

Specific Comment 15
Section 5.5.9, Surface Water and Groundwater Resources and Uses, p 29: The qualifier 'relatively adjacent to the site' does not assist the reader in determining spatial relevance of the private water wells. The Trustees recommend changing the text to read 'adjacent' or within a specified distance and direction of the facility boundary. Figure 8 should the show the entire facility and respective locations of the private wells to be of use in understanding the spatial relationship between the facility and the wells.

Specific Comment 16
Section 5.6.2, Screening Level Assessment – Step 2, p 36: Bioaccumulative COPECs should be retained for further evaluation if they are detected in site media potentially posing a risk of bioaccumulation to higher trophic levels – even if they are present at concentrations below the screening level benchmarks. This is because COPECs that bioaccumulate may pose a significant risk to higher trophic level organisms if they biomagnify through the food chain.

Specific Comment 17
Section 5.6.2.1.2, Groundwater / Surface Water, p 37: This section states that bioaccumulative COPECs "may be necessary to evaluate [for] the potential for trophic transfer to terrestrial wildlife in developing screening levels for surface waters". The text further states that "the potential for evaluating this pathway as part of the SLRA will be discussed further with EPA region 6 and the state and federal trustees". The Trustees feel that if bioaccumulative compounds (such as PCBs) are detected in groundwater/surface water, and the pathway is complete, they should be evaluated for trophic transfer.

Specific Comment 18
Section 5.6.3.1.6, Ecotoxicity of Contaminants, p 42: The Trustees resubmit the following comment. This section stated that "Federal and State AWQC will be used to evaluate toxic effects of fish and other aquatic species in surface water and the palustrine/estuarine wetlands and Redfish Bay." While AWQC are assumed to be

protective of fish and aquatic invertebrates from a surface water standpoint, they do not take into account ingestion of contaminated sediment. The sediment to invertebrate and sediment to fish pathways will need to be addressed in the ecological risk assessment.

Specific Comment 19
Section 5.6.3.2.2, Exposure Point Concentrations, p 45: "Exposure point concentrations will be developed for surface water and sediment in the site palustrine/estuarine wetlands and Redfish Bay." Please clarify how exposure point concentrations will be developed for the wetlands without sampling the wetlands. The limited number of samples planned for Redfish Bay will not be adequate to characterize exposure risk to sediments.

Specific Comment 20
Section 5.6.3.2.2, Exposure Point Concentrations, p 46: Revise text in fourth paragraph to state "With the exception of shallow groundwater...the groundwater is an incomplete ecological pathway unless there is a groundwater discharge to *sediments* and/or surface water".

Specific Comment 21
Figure 8, p 88: Please correct Phayr Rd to Thayer Road, show the location of the Refinery Site in relation to the wells, and show the location of Brenda Carroll's well since it is discussed in the text.

Specific Comment 22
Figure 19, p 97: The conceptual site model for the ecological risk assessment does not show leaks/spills as a primary release mechanism to the On-Site Wetlands. Please revise as this pathway is discussed at length in the text and will be evaluated in the risk assessment.

Specific Comments, RI/FS Field Sampling Plan document

Specific Comment 1
Section 4.0, Sampling Objectives, p 2: See general comment number 1. The Trustees view this sampling plan as deficient and incomplete without sampling objectives for the wetlands and pipelines.

Specific Comment 2
Section 5.1.3, Adjoining Plains Marketing Facility, p 5: The statement that sources up gradient the North Facility have likely impacted the NORCO facility should be omitted as it subjectively identifies a conclusion that remains to be been substantiated. The groundwater potentiometric map provided as Figure 4 does not unequivocally substantiate this statement. The prior paragraph referencing Figure 4 also states quarterly gauging and sampling was conducted at 19 monitoring wells. A comparison of Figures 4 and 5 shows the area under TCEQ's Voluntary Clean-Up program immediately adjacent MW-1, MW-2, MW-3, and MW-4. The potentiometric map in

Figure 14 incorporates and appears applicable to both areas. The quarterly gauging should provide data for multiple potentiometric maps that reflect the groundwater gradient over multiple seasons and years substantiating or refuting such a position. Why was this additional information and graphic representation not included? This observation was previously identified in Trustee comment to Section 5.1.3 of the RI/FS Field Sampling Plan and submitted with EPA's February 3, 2005 comments to the Draft RI/FS.

Specific Comment 3
Section 5.1.4, North Site Soil Investigation (AOC-1), p 6: Identify the reference datum for the term 'gradient' as it is applicable to either the potentiometric gradient or topographic gradient when evaluating site hydrology.

Specific Comment 4
Section 5.1.5, North Site Groundwater Investigation AOC-1, p 7: Identify the reference datum for the term 'gradient' as it is applicable to either the potentiometric gradient or topographic gradient when evaluating site hydrology.

Specific Comment 5
Section 5.2.1.2, AOC-2 Sampling Data, p 8: Identify in Figure 10 the locations for the referenced AOC-2 and background samples. Provide the background sample results for comparison.

Specific Comment 6
Section 5.2.1.4, AOC-2 Soil Investigation, p 9: Soil borings should not be placed within the road as such placement handicaps potential data quality through 1) placement within and through disturbed and modified road base, 2) possible impacts associated with current and historical dust control practices (watering and oiling road surface), 3) potential vehicle contributions to soil sampling results, 4) and modified vertical hydrology not indicative of adjacent site hydrology and possible impact to adjacent hydrology. Placement of the soil boring on either side of the road, preferably down hydraulic gradient, is appropriate. Revise Figure 11 as necessary.

Specific Comment 7
Section 5.2.1.5, AOC-2 Groundwater Investigation, p 10: Monitor wells should not be completed within the road as such placement handicaps potential data quality through 1) placement within and through disturbed and modified road base, 2) possible impacts associated with current and historical dust control practices (watering and oiling road surface), 3) potential vehicle contributions to water sampling results, 4) and modified vertical hydrology not indicative of adjacent site hydrology and possible impact to adjacent hydrology. Placement of monitoring wells on either side of the road, preferably down hydraulic gradient, is appropriate. Bullet Item: The qualitative reference to the differing elevation between the monitoring wells and the tanks and berms as 'significant' should be replaced with an approximate numerical elevation difference. This can be readily obtained from either topographic maps or surveyed structures and property surveys. The reference to how wetland associated impacts will be addressed needs to

be clarified. The document in which the text resides is the RI/FS for the Site. Note comment applicable to Page 4, Section 4.0, 3rd Paragraph. Also, see comment for Page 6, Section 5.1.4, Bullet Items.

Specific Comment 8
Section 5.2.3.4, AOC-4 Soil Investigation, p 13: Text identifies AOC4B-26 as a boring to be utilized in assessing the northeast perimeter of AOC-4. Figure 17 indicates the correct boring label is actually AOC4B-36.

Specific Comment 9
Section 5.2.5.1, AOC-6 Background Information, p 16: The statement including the modifier 'allegedly' and speculation as to the sample source are inappropriate for an RI/FS document. Records in dispute should be included as recorded until resolved. Statements of opinion as to the validity of those records are inappropriate and not constructive. The statement should be deleted.

Specific Comment 10
Section 5.2.5.5, AOC-6 Groundwater Investigation, p 17: Bullet Item: Clarify the intent behind the location referenced as "the vicinity" (i.e., down potentiometric gradient from AOC-6, etc).

Specific Comment 11
Section 5.3.1, AOC-7 Background Information, p 18: It is unclear how an absence of hot spots serves as justification for probability based sampling when no sampling has been performed within the area of concern from which hot spots could have been identified. The justification statement should be clarified.

Specific Comment 12
Section 6.1, Off-site Sample Locations and Frequency, AOCs 8, 9, and 10 (Wetlands), p 21: "Additional data concerning wetlands issues will be addressed in a subsequent Field Sampling Plan." This statement contradicts previous statements that indicate NORCO will take no action on the wetlands or the pipelines until the ARM spill is resolved. There is no scheduled submittal date for this subsequent sampling plan. Will the ecological risk assessment be delayed indefinitely along with the sediment sampling plan? It is impossible to characterize risk to aquatic receptors until sediment sampling is complete. The RIFS will remain incomplete until the sediments are addressed.

Specific Comment 13
Section 6.2.2, AOC-12 Sediment Investigation, p 22: Three sediment samples alone are unlikely to adequately characterize the nature and extent of potential contamination in Redfish Bay. Please see general comment number 2 for additional information.

Specific Comment 14
Section 6.2.2, AOC-12 Sediment Investigation, p 22: Table 1 is not a complete COPEC list, it only lists general categories such as metals. It also omits listing COPEC analytes for sediment samples. Please revise.

Specific Comment 15
Section 6.4.1, AOC-14 Background Information, p 24: Please modify the following inappropriate statement by omitting the underlined portion, "NORCO will agree to install two soil borings near the Salinas' yard; however NORCO does not take responsibility if contamination is discovered".

Specific Comment 16
Section 6.5.1, AOC-15 Background Information, p 25: There is no evidence to either support or refute use of the NPDES outfall, thus it is necessary to provide assurance that this potential POE has been investigated as a matter of due diligence.

Specific Comments 17
Section 6.6.1, AOC-16 Background Information, p 25: This section indicated that "because NORCO has not been responsible for the facility in over 20 years and other operators have had releases at the AOC, this potential AOC will not be sampled." EPA has instructed NORCO to sample this point and they should comply. NORCO should refer to the definition of responsible party under CERCLA: "Potentially Responsible Party" is defined in CERCLA §107(a)(1), which imposes liability on four classes of persons:"(1) the current owner and operator of a vessel or facility; (2) any prior person who at the time of disposal of any hazardous substance owned or operated any facility at which such hazardous substances were disposed of, (3) any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances owned or possessed by such person, . . . (4) any person who accepts o accepted any hazardous substances for transport to disposal or treatment facilities. . . from which there is a release, or threatened release which causes the incurrence of response costs, of a hazardous substance . . . ."

Specific Comment 18
Section 7.7, Sediment Sampling, p 29: Sediment samples should be collected from the upper 0.5 foot of sediments in order to characterize risk to benthic organisms – which live in this oxic layer.

Specific Comment 19
Section 7.8, Surface Water Sampling, p 29: Revise the text in the last bullet to state that "surface water samples will be obtained from downstream..."

Specific Comment 20
Figures 11-31, p 43-63: These figures show the location of soil borings and monitoring wells on the site. The flowing wells appear to lie directly on or under an existing road: AOC2-B1, AOC2-B2, AOC-B3, AOC-MW1, AOC-MW2, AOC-MW3, AOC4-B2, AOC4-B3, AOC4-MW2, AOC4-MW3. While placing wells beneath an existing road may increase ease of access, we usually suggest wells be placed in soils not located under roads because of the confounding contamination often associated with the roads themselves. If these roads are strictly gravel in nature, without a corresponding tar layer underneath these locations may be used at the discretion of the USEPA.

Specific Comments, RI/FS Quality Assurance Project Plan

Specific Comment 1
Section A 6.1, Problem Definition, Off-site Sampling, p 14: Three sediment samples alone are unlikely to adequately characterize the nature and extent of potential contamination in Redfish Bay. Please see general comment number 2 for additional information.

Specific Comment 2
Section A 8.1.5.3, Confirm that the Risk-based Screening Level Exceeds Measurement Detection Limits, Ecological, p 33: It is inappropriate to compare soil and/or sediment ecological benchmarks to the human health based EPA region 6 residential soil MSSLs in order to assess the adequacy of the selected ecological benchmarks.

Specific Comment 3
Section A 8.1.5.3, Confirm that the Risk-based Screening Level Exceeds Measurement Detection Limits, Ecological, p 45: Background samples should be collected concurrently with the other site-related samples. Please see general comment number 2 for additional information.

Specific Comment 4
Table 2, p 93: Please revise this table to reflect screening and analytical methods for investigation of sediment samples.